

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SMITH POND	Lake Area (ha):	10.76
Town: WASHINGTON	Maximum depth (m):	9.3
County: Sullivan	Mean depth (m):	5.0
River Basin: Merrimack	Volume (m ³):	538500
Latitude: 43°09'18" N	Relative depth:	2.5
Longitude: 72°01'49" W	Shore configuration:	1.00
Elevation (ft): 1075	Areal water load (m/yr):	11.71
Shore length (m): 1100	Flushing rate (yr ⁻¹):	2.30
Watershed area (ha): 199.3	P retention coeff.:	0.53
% watershed ponded: 0.0	Lake type:	natural

BIOLOGICAL:

7 January 1998

17 July 1997

DOM. PHYTOPLANKTON (% TOTAL)	#1	ASTERIONELLA 50%	DINOBRYON 60%
	#2	DINOBRYON 45%	ASTERIONELLA 35%
	#3	RHIZOLENIA 4%	
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			5.12
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 50%	CALANOID COPEPOD 75%
	#2	SYNCHAETA 16%	
	#3	KELLCOTTIA 13%	
ROTIFERS/LITER		125	<1
MICROCRUSTACEA/LITER		8	100
ZOOPLANKTON ABUNDANCE (#/L)		149	100
VASCULAR PLANT ABUNDANCE			Sparse
SECCHI DISK TRANSPARENCY (m)			5.4
BOTTOM DISSOLVED OXYGEN (mg/L)		9.5	0.6
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	4.9
Hypolimnion volume (m ³):	14500
Anoxic volume (m ³):	2750

CHEMICAL:

Lake: SMITH POND

Town: WASHINGTON

	7 January 1998		17 July 1997		
DEPTH (m)	3.0	6.0	2.0	5.5	8.5
pH (units)	6.3	6.3	6.8	6.0	6.0
A.N.C. (Alkalinity)	2.9	3.7	3.3	2.4	4.4
NITRATE NITROGEN	< 0.05	< 0.05		< 0.05	< 0.05
TOTAL KJELDAHL NITROGEN	0.30	0.20	0.20	0.20	0.30
TOTAL PHOSPHORUS	0.006	0.006	0.011	0.017	0.015
CONDUCTIVITY (μ mhos/cm)	25.3	25.6	23.2	21.6	23.7
APPARENT COLOR (cpu)	6	8	< 5	8	9
MAGNESIUM			0.38		
CALCIUM			2.0		
SODIUM			1.5		
POTASSIUM			0.40		
CHLORIDE	< 2	< 2	< 2	< 2	< 2
SULFATE	5	5	5	4	4
TN : TP	50	33		12	20
CALCITE SATURATION INDEX			3.7		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1997

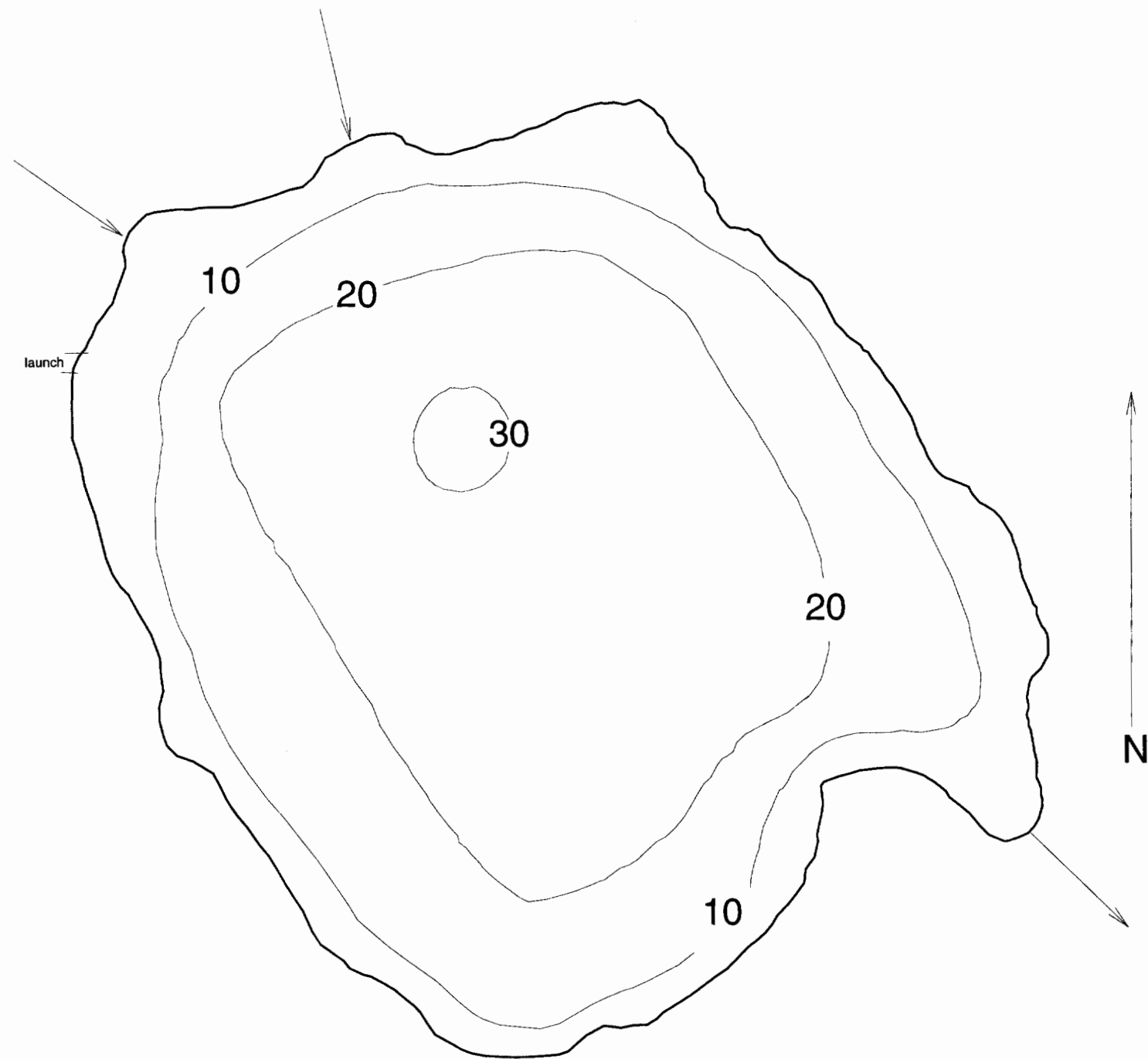
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
3	1	0	1	5	Oligo.

COMMENTS:

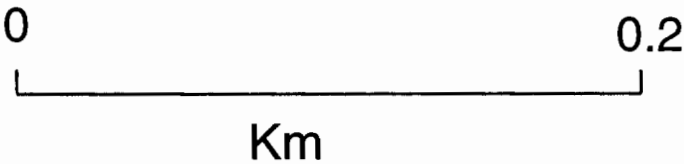
1. Smith Pond was previously surveyed in 1986 and was also classified as oligotrophic at that time. The major difference in trophic criteria between the two dates was in bottom dissolved oxygen. Less oxygen was present in 1997, but this was probably due to a sampling date later in the summer than in 1986.
2. During the winter, *Asterionella* and *Dinobryon* were in sufficient quantities to impart a fishy odor. Water immediately under the ice had a greenish color.
3. Good launch site.
4. One loon and many tadpoles observed.
5. Five cottages present along the shore.

Smith Pond

Washington

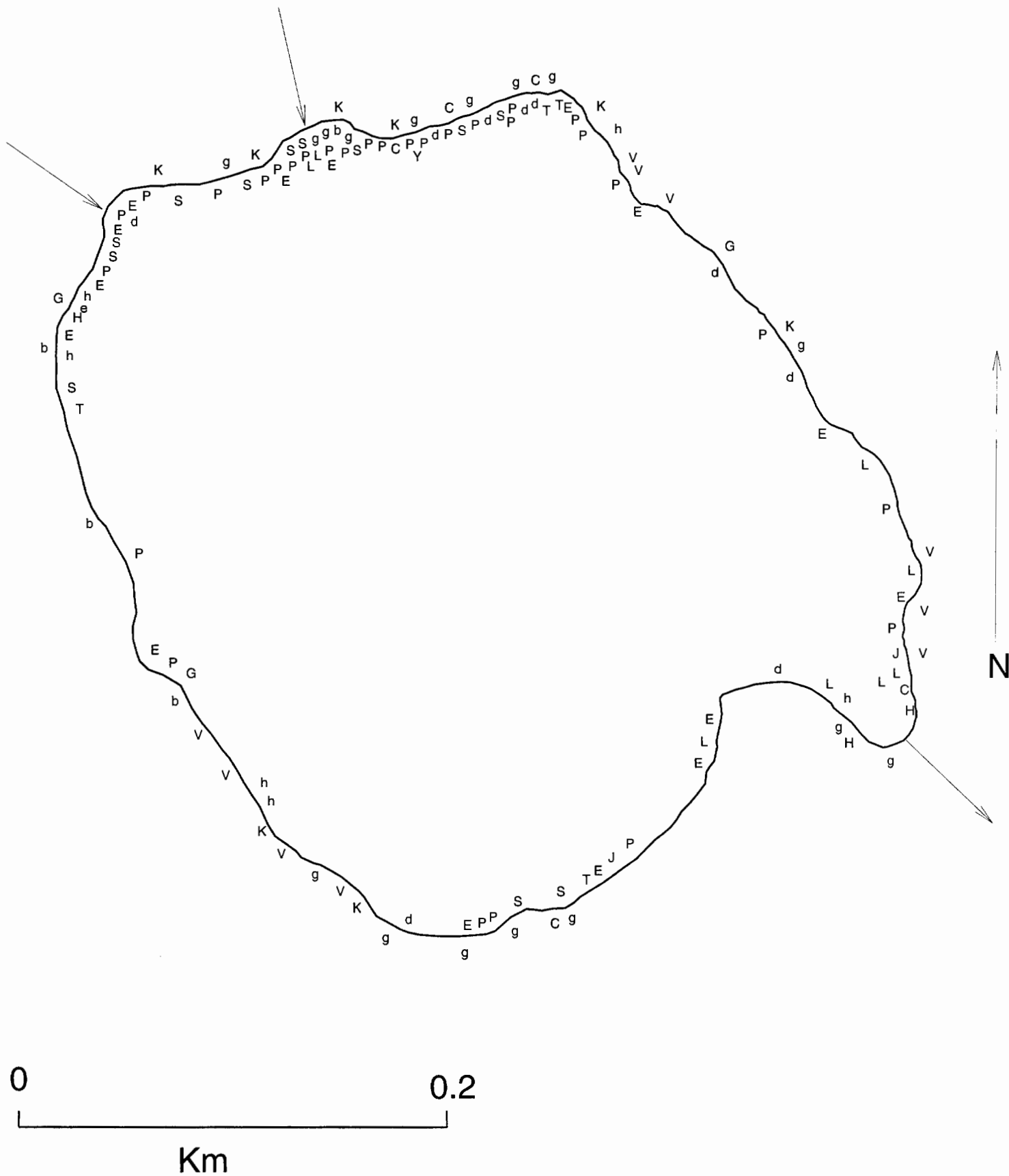


10 foot depth contours



[illegible]

Smith Pond Washington



111-230

[illegible]